

Three new species of *Stevia* (Asteraceae: Eupatorieae) from northern Coahuila

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ABSTRACT

Three novelties of *Stevia* from Mexico, are proposed: ***S. burroana*** B.L. Turner, **sp. nov.**, ***S. totalcoana*** B.L. Turner, **sp. nov.** and ***S. vacana*** B.L. Turner, **sp. nov.**; the former from Coahuila relates to *S. ovata* var. *expansa*; the latter two from Vera Cruz and Coahuila relate to *S. tephra*. Type photographs of the several taxa are provided, including maps showing their distribution (along with those taxa to which they are most closely related). Published on-line www.phytologia.org *Phytologia* 96(2): 117-123 (April 1, 2014). ISSN 030319430

KEY WORDS: Asteraceae, Eupatorieae, *Stevia*, *S. ovata*, *S. tephra*, Mexico, Coahuila

The genus ***Stevia*** contains ca 200 species, 100 or more native to Mexico, many of these described (Soejima et al. 2001; Turner 2013; etc.) after the seminal work of (Grashoff 1972, 1974); its specious nature is largely occasioned by asexual reproduction compounded by chromosomal variability and hybridization, as well documented by Japanese workers (Soejima, A., T. Yahara and K. Watanabe 2001; Watanabe et al. 2001). No doubt additional novel taxa will come to the fore as more hinterland areas are collected.

STEVIA BURROANA B.L. Turner, **sp. nov.** **Fig. 1**

Suffruticose rhizomatous herbs or shrublets, up to 1.5 m high. **Leaves** mostly opposite, 4-10 cm long, 1.5-4.0 cm wide; petioles 2-10 mm long, passing into the blades; blades ovate, 3-nervate from near the base, glabrous above and below, or nearly so, weakly serrate, the margins pubescent. **Capitulescence** a terminal cymose panicle, 3-6 cm high, and as wide, the ultimate peduncles, 3-8 mm long, pubescent with minute glandular trichomes. **Heads** 6-7 mm high; involucre bracts beset with minute glandular trichomes and golden globules; apices acute. **Corollas** 5-6 mm long, glabrous, white to pink; tubes ca 2 mm long, passing into the throat; lobes ca 2 mm long, glabrous or nearly so. **Achenes** ca 5 mm long, brown, sparsely hispid; pappus a crown of lacerate scales ca 0.5 mm high.

TYPE: MEXICO. COAHUILA: Mpio. de Villa Acuna, “CA. 54 miles NW of Musquiz, in the RINCON DE MARIA of the limestone Sierra de la Encantada (Sa. De Santa Rosa),” 1960 m, “n-facing woodland-forest with oaks and *Pseudotsuga*,” [etc.] 17 Sep 1999, *Henrickson 22531*. [with D.H. Riskind] (Holotype: TEX).

ADDITIONAL SPECIMENS EXAMINED: MEXICO. COAHUILA: Mpio. de Villa Acuna, 1650 m, “near upper pila in canyon El Bonito,” 17 Sep 1977, *Riskind 2091* (TEX); Canyon El Toro, 18 Sep 1977, *Riskind 2127* (TEX); Canyon El Toro, 18 Sep 1977, *Riskind 2147* (TEX). “Rancho El Rincon, “on SW margin of Sierranias del Burro (part of Sierra del Carmen), ca 80 km SE of Big Bend National Park.” 1400-2100 m, 21 Aug 1991, *S.A. Ruiz 178* (TEX).

Because of the remarkable, minute, glandular trichomes on the ultimate peduncles and involucre of ***S. burroana***, this novelty will key to ***S. incognito*** Grashoff in my key to the Mexican Stevias (Turner 1997), which it resembles not. Unfortunately, Grashoff (1972) did not possess material of ***S. burroana*** at the time of his study. On total characters, however, the novelty appears closest to the allopatric ***S. ovata***

var. **expansa** Grashoff (including var. *texana* Grashoff of closely adjacent Big Bend region of Texas), which lacks glandular trichomes. Intermediates between the two allopatric taxa (Map 1) have not been noted.

The novelty is named for the Serranias del Burro, from which 4 of the 5 specimens have been collected.

STEVIA TOTALCOANA B.L. Turner, *sp. nov.* **Fig. 2**

Perennial herbs 30-60 cm high. **Mid-stems** 3 mm across, pubescent with crinkly hairs, the vestiture ca 0.5 mm high. **Leaves** (larger) 3-7 cm long, 1.0-1.5 cm wide; petioles 1-6 mm long; blades linear-lanceolate, mostly opposite below, alternate above, glabrous on both sides, passing into the petioles, the margins denticulate. **Capitulecence** a terminal cymose panicle 3-5 cm high, and as wide, the ultimate peduncles 1-5 mm long. **Heads** ca 1 cm high; the involucre bracts 7-9 mm long, glabrous to sparsely pubescent, their apices acute. **Corollas** white to pale pink, 5-6 mm long, glabrous or nearly so; tubes ca 2 mm long, passing into the throat, the lobes ca 2 mm long, sparsely pubescent beneath. **Achenes** brown, sparsely hispid above, 4 bearing a crown of lacerated scales, 0.5-1.0 mm high. 1(or 2) bearing bristles 3-6 mm long.

TYPE: **MEXICO. VERACRUZ: Mpio. Perote.** 2.1 mi SW of Totalco on western slope of rocky limestone ridge, ca 2350 m, 19 28 N, 97 22 W, 29 Oct 1983, *B.L. Turner 15435* (Holotype: TEX).

ADDITIONAL SPECIMENS EXAMINED: all collected at the same locality as the type and on the same date: *Turner 15430* (TEX), *15437* (TEX).

I apparently collected the several sheets enumerated above because of the variability of their habit (perennial to suffruticose herbs) and corolla color (white to pink). Except for such variation, the collections are very similar.

The several specimens cited above were initially identified as *S. tephra*, the type from Sierra de Pachuca, Hidalgo State. *Stevia totalcoana* differs from the latter in several characters, including head size, leaf size and shape, as well as being glabrous, as noted in the key below.

STEVIA VACANA B.L. Turner, *sp. nov.* **Fig. 3**

Perennial herbs, 45 cm high or more. **Mid-stems** purple, ca 2.5 mm across, pubescent with crinkly hairs, the vestiture ca 1 mm high. **Leaves** alternate, 4-5 cm long, 2-3 cm wide; petioles 2-5 mm long; blades broadly ovate, 3-nervate from near the base, passing into the petioles, upper and lower surfaces glabrous, except along the venation and margins, markedly glandular punctate. **Capitulescence** a terminal cymose panicle ca 15 cm high, and as wide, the ultimate peduncles 1-3 mm long, pubescent like the stems, with an understory of minute glandular hairs. **Heads** 10-12 mm high; involucre 7-9 mm long, pubescent with mostly upswept hairs, beset with amber globules. **Corollas** dark pink, 4-5 mm long, sparsely pubescent; tube ca 2 mm long, passing into the throat; lobes 1-2 mm long, sparsely pubescent beneath. **Achenes** black, 4-5 mm long, sparsely ciliate; pappus a crown of lacerate scales ca 0.5 mm high, a single achene (rarely 2) bearing 2-5 purple awns 3-5 mm long.

TYPE: **MEXICO. COAHUILA: Mpio de Ocampo,** Sierra del Pino, "ejido Acebuches, Canon La Vaca." 28 15 N, 102 59 W, 1850 m." Pinus-Juniperus forest, 2 Oct 2003, *M. A. Carranza c-4019* [with Ismael Ramirez]. (Holotype: TEX).

This novelty is readily separated from nearby populations of *S. ovata* var. **expansa** by a combination of characters: broadly ovate leaves, large heads (10-12 mm high vs 6-9 mm) and achenes 4-5 mm long. Indeed, when first examined I assigned the collection to that taxon (as did the original

identifier), to which it will begrudgingly key in my account of Mexican Stevias (Turner 1997). Reassessment of the latter complex has led to the recognition of the present novelty as a peripheral taxon related to the widespread *S. tephra* (Fig. 3), as envisioned by Grashoff (1972). So far as known the two taxa do not intergrade. A key to the *S. tephra* complex follows (cf. Fig 4):

1. Larger leaves linear-lanceolate, 4-6 cm long, widest near the middle, glabrous or nearly so; Mpio. Perote, Ver. ***S. totalcoana***
1. Leaves ovate to oval, 2-4 cm long, widest near base, mostly densely pubescent beneath (rarely not); north-central Mexico... (2)
2. Leaves broadly ovate, 4-6 cm long, mostly glabrous beneath; involucre bracts 7-9 mm long; Sierra del Pinos, Coa..... ***S. vacana***
2. Leaves oval to narrowly ovate, 2-4 cm long, mostly densely pubescent beneath; involucre bracts 5-7 mm long; widespread, mostly north-central Mexico..... ***S. tephra***

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LITERATURE CITED

- Grashoff, J. 1972. A systematic study of the North and Central American species of *Stevia*. Doctoral Dissertation, the University of Texas, Austin.
- Grashoff, J. 1974. Novelty in *Stevia* (Compositae: Eupatorieae). *Brittonia* 26: 347-384.
- Soejima, A., T. Yahara and K. Watanabe. 2001. Thirteen new species and two new combinations of *Stevia* (Asteraceae: Eupatorieae) from Mexico. *Brittonia* 53: 377-395.
- Soejima, A., T. Yahara and K. Watanabe. 2001. Distribution and variation of sexual and agamospermous populations of *Stevia* (Asteraceae: Eupatorieae) in the lower latitudes. *Pl. Spec. Biol.* 16: 91-105.
- Turner, B.L. 1997. *Stevia*, in *The Comps of Mexico*, *Phytologia Mem.* 11: 170-197.
- Turner, B.L. 2013. Two novel Stevias (Asteraceae: Eupatorieae) from North-Western Mexico. *Phytologia* 95: 250-254.
- Watanabe, K., Y. Tetsukazu, A. Soejima and M. Itos. 2001. Mexican species of the genus *Stevia* (Eupatorieae, Asteraceae): Chromosome numbers and geographical distribution. *Pl. Spec. Biol.* 16: 49-68.

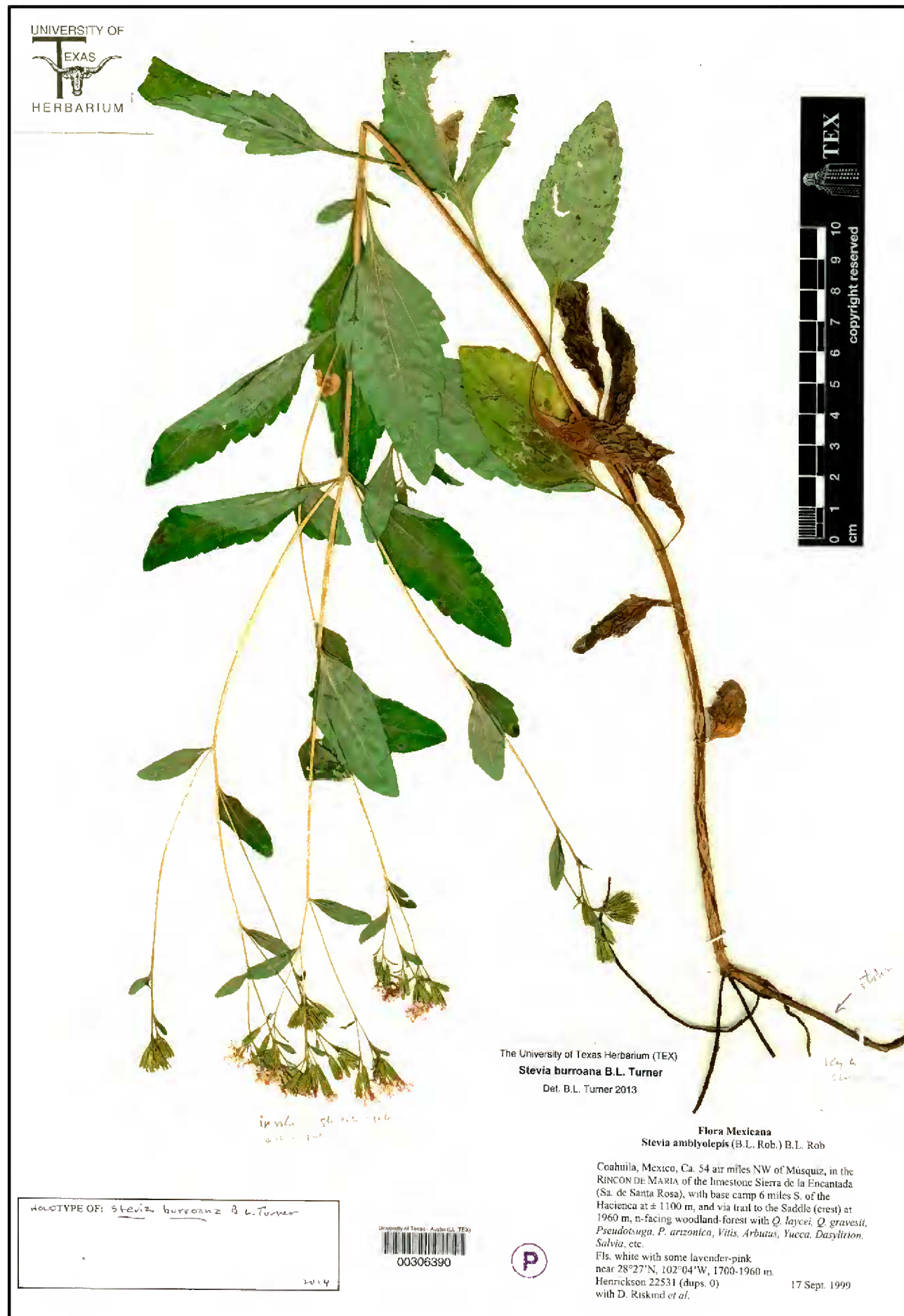


Fig. 1. *Stevia burroana*, (Holotype: TEX).

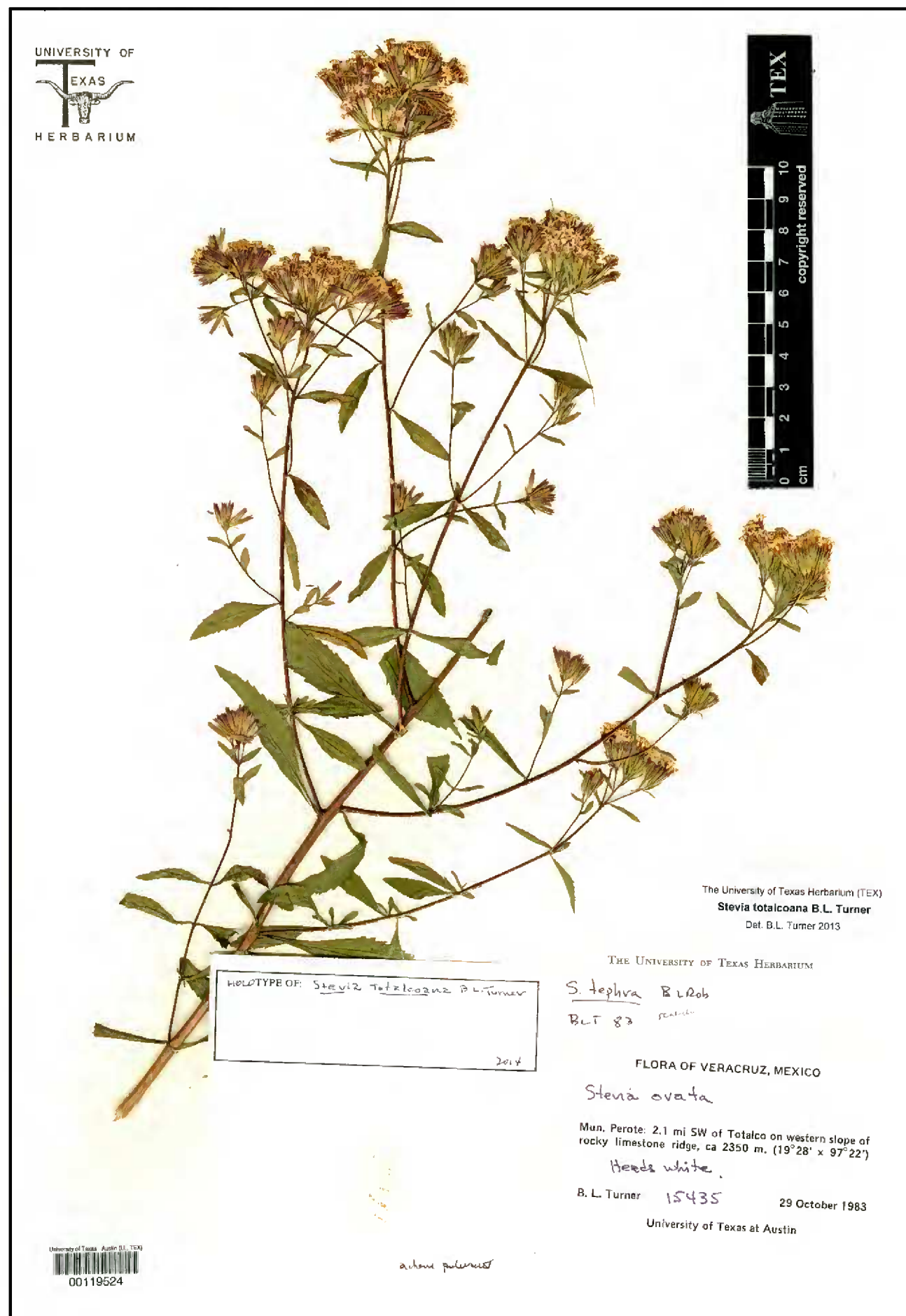


Fig. 2. *Stevia totalcoana* (Holotype: TEX).



Fig. 3. *Stevia vacana* (Holotype: TEX).

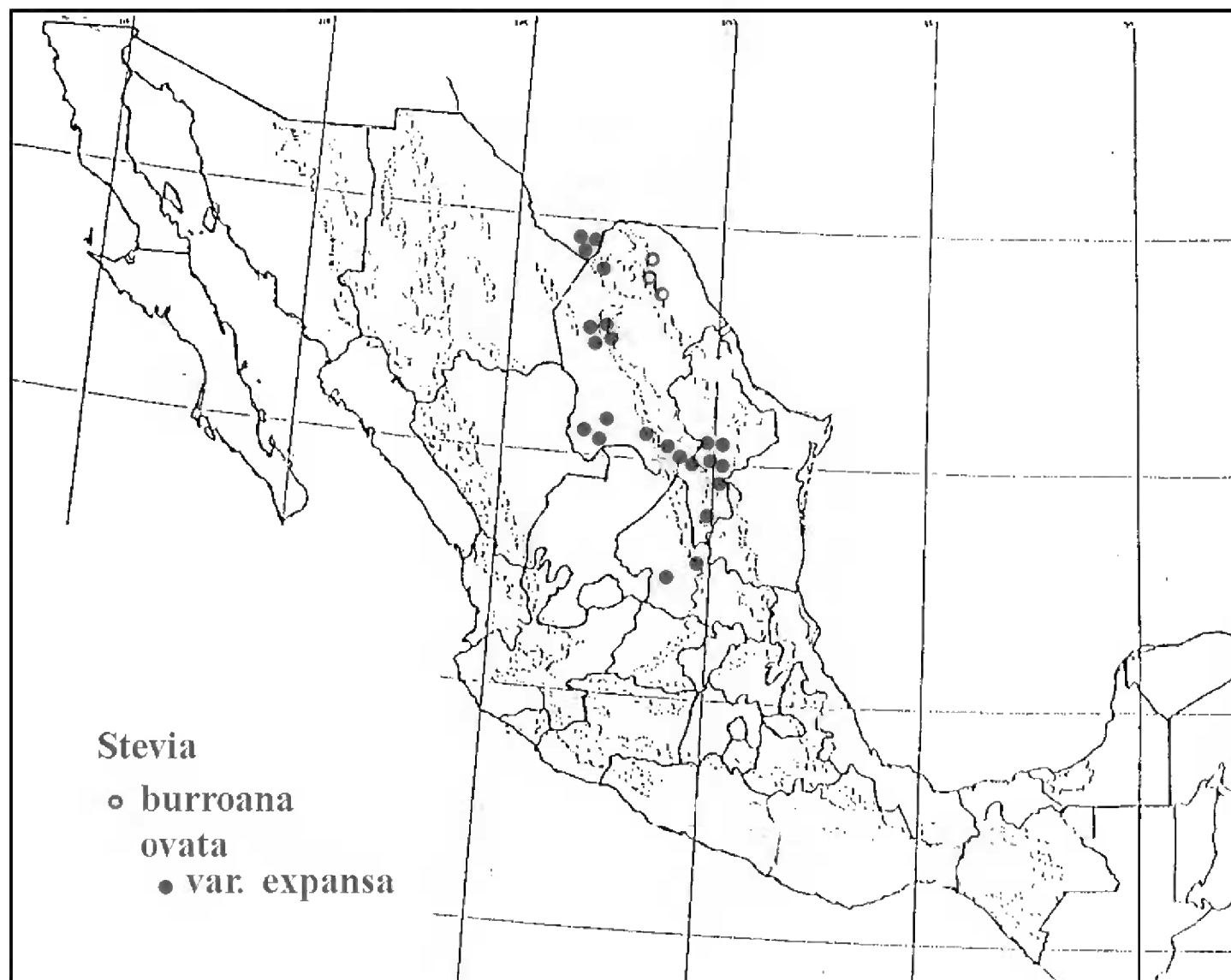


Fig. 4. Distribution of *Stevia burroana* and *S. ovata* var. *expansa*.

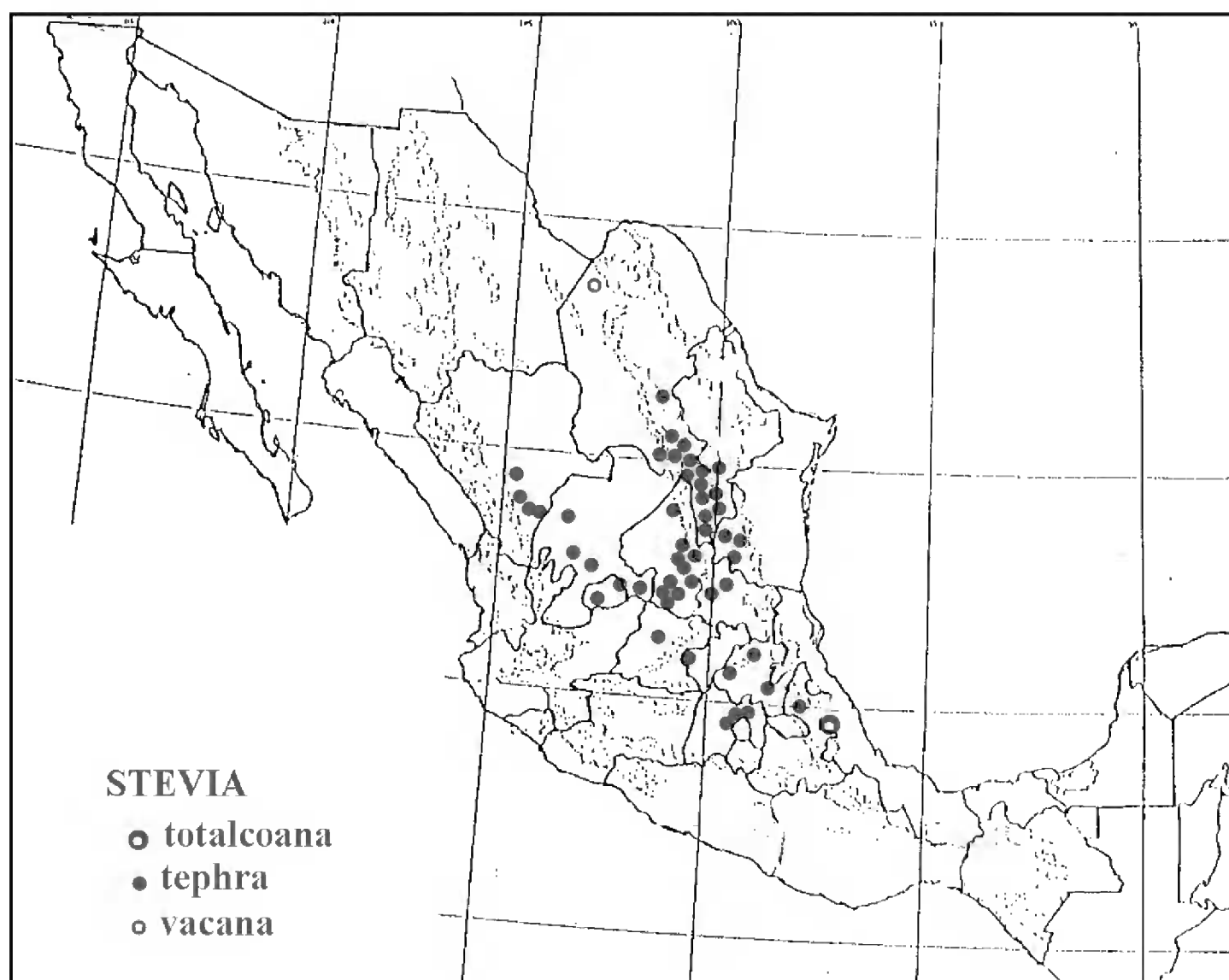


Fig. 5. Distribution of *S. totalcoana*, *S. vacana* and their closest relative, *S. tephra*.